



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,378	10/30/2003	Daniel S. McGuire	539.009	7897

7590 12/30/2005

ROBERT J. HARTER
4233 CLIFFSIDE DRIVE
LA CROSSE, WI 54601

EXAMINER

LIN, ING HOUR

ART UNIT	PAPER NUMBER
----------	--------------

1725

DATE MAILED: 12/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/697,378	Applicant(s) MCGUIRE, DANIEL S.	
	Examiner Ing-Hour Lin	Art Unit 1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2005.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-74 is/are pending in the application.
 4a) Of the above claim(s) 57-74 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-56 is/are rejected.
 7) ☒ Claim(s) 33 is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's election without traverse of claims 1-56 in the reply filed on 10/12/05 is acknowledged.

Claim Objections

2. Claim 33 is objected to because of the following informalities: In claim 33, line 1, "claim 1" should be changed to --claim 32--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 19, 27, 30-31, 44-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 19, 27, 30-31, 44 contain the trademark/trade name "Mulcoa 60", "frit 3124", and "HP4". Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the

Art Unit: 1725

trademark/trade name is used to identify/describe “refractory and non-reactive refractory such as fritted aluminosilicates” and, accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 38, 41 are rejected under 35 U.S.C. 102(b) as being anticipated by Watts.

Watts (col. 1, lines 62+) teaches binder and refractory in process and slurry formulation for making precision casting shells, wherein the refractory flour of minus 100 mesh including silicon dioxide, fused quartz, fused aluminum oxide, tabular alumina, zirconia, and zircon; and the slurry having viscosity of 8500 cps and the slurry includes colloidal silica in 4,000 cc. solution No. 2, 11 lbs fused silica of minus 100 mesh and 16 lbs zircon flour of 100-325 mesh.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-2, 4-10, 19-21, 23-24, 28-29, 36-37, 39-40, 43, 51-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watts in view of Pineda et al.

Art Unit: 1725

Watts fails to teach the use of particles having distribution of particles size and size greater than 100 mesh. However, Pineda et al (col. 2, lines 39+) teach the effect of starch, gypsum and distribution of particles size between 70 – 325 mesh on the reduction of cycle time in investment casting and teach the use of a particular amount of coarse silica filler with 70 mesh in phosphate investment slurry and applying the slurry to a pattern for the purpose of constructing a casting shell; melting the pattern and filling the shell with molten metal for the purpose of reducing the cycle time between the applying step and the filling step to one hour (col. 3, lines 13+). It would have been obvious to one having ordinary skill in the art to provide Watts the use of particles having distribution of particles size and size greater than 100 mesh as taught by Pineda et al in order to effectively reduce the cycle time between the applying step and the filling step to one hour.

Regarding claims 36-37, 39-40, and 54-55, Watts in view of Pineda et al fails to teach the use of slurry having viscosity of greater than 10, 000 and 100,000 cps. However, the use of slurry having viscosity of greater than 10, 000 and 100,000 cps would have been obvious to one having ordinary skill in the art for the purpose of holding large heavy particle in the stable slurry and making uniform casting mold in reduced cycle time.

9. Claims 3, 15-18, 27, 32-35, 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watts in view of Pineda et al and further in view of Vandermeer.

Watts in view of Pineda et al fails to teach the use of particles including colloidal silica (40%), silicon carbide and non-reactive refractory such as fritted aluminosilicates. However, Vandermeer (col. 3, lines 45+) teaches the use of particles including colloidal silica (40%),

Art Unit: 1725

silicon carbide and non-reactive refractory such as fritted aluminosilicates for the purpose of effectively constructing an investment casting mold. It would have been obvious to one having ordinary skill in the art to provide Watts in view of Pineda et al the use of particles including colloidal silica (40%), silicon carbide and non-reactive refractory such as fritted aluminosilicates as taught by Vandermeer in order to effectively construct an investment casting mold.

10. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watts in view of Pineda et al and further in view of Quraishi et al.

Watts in view of Pineda et al fails to teach the use of a particular size and weight % of silicon carbide. However, Quraishi et al (col. 11 lines 18+) teach the use of a particular size 80-800 mesh and 10 weight % of silicon carbide for the purpose of effectively constructing an investment casting mold having a function of heat retainer because silicon carbide is a microwave heat susceptor. It would have been obvious to one having ordinary skill in the art to provide Watts in view of Pineda et al the use of a particular size 80-800 mesh and 10 weight % of silicon carbide as taught by Quraishi et al in order to effectively construct an investment casting mold having a function of heat retainer.

11. Claims 22, 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watts in view of Pineda et al in view of and further in view of Helferich et al.

Watts in view of Pineda et al fails to teach the use of feldspar perlite. However, Helferich et al (col. 5 lines 42+) teach the use of feldspar perlite for the purpose of effectively controlling the setting time of the slurry. It would have been obvious to one having ordinary

Art Unit: 1725

skill in the art to provide Watts in view of Pineda et al the use of feldspar perlite as taught by Helferich et al in order to control the setting time of the slurry.

12. Claims 30-31, 44-48 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watts in view of Pineda et al and further in view of Applicant's admission.

Watts in view of Pineda et al fails to teach the use of the known HP4 refractory. However, Applicant's admission (page 12, lines 19+) teaches the use of HP4 for the purpose of effectively constructing investment slurry using the and further in view of Applicant's admission known refractory. It would have been obvious to one having ordinary skill in the art to provide Watts in view of Pineda et al the use of known HP4 refractory as taught by Applicant's admission in order to effectively constructing investment slurry using the known refractory.

13. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watts in view of Pineda et al and further in view of Applicant's admission and Helferich et al

Watts in view of Pineda et al and further in view of Applicant's admission fails to teach the use of feldspar perlite. However, Helferich et al (col. 5 lines 42+) teach the use of feldspar perlite for the purpose of effectively controlling the setting time of the slurry. It would have been obvious to one having ordinary skill in the art to provide Watts in view of Pineda et al and further in view of Applicant's admission the use of feldspar perlite as taught by Helferich et al in order to control the setting time of the slurry.

Art Unit: 1725

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ing-Hour Lin whose telephone number is (571) 272-1180. The examiner can normally be reached on M-F (9:00-5:30).

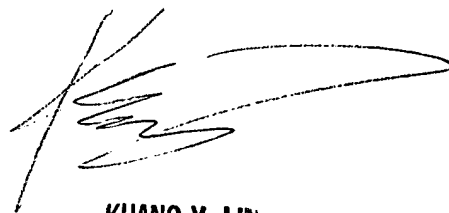
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

I-H Lin

I.-H. Lin

12/23/05



KUANG Y. LIN
EXAMINER
GROUP 320

1725